TECHNICAL REVIEW DOCUMENT
for
RENEWAL of OPERATING PERMIT 99OPAD220

BFI Waste Systems of North America
Tower Road Landfill
Adams County
Source ID 0010182

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I. Purpose:

This document will establish the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed operating permit proposed for this site. The original Operating Permit was issued February 1, 2001, and expires on February 1, 2006. This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted January 27, 2005. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at http://www.cdphe.state.co.us/ap/Titlev.html.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

II. Description of Source

The Tower Road Landfill is classified as a municipal solid waste landfill, which falls under the Standard Industrial Classification 4953. This facility is located at 8480 Tower Road, Commerce City, Adams County, Colorado. This facility is located in the Denver Metro Area. The Denver Metro Area is classified as attainment/maintenance for particulate matter less than 10 microns in diameter (PM10), 1-hr ozone/VOC, and carbon monoxide (CO). Under that classification,

all SIP-approved requirements for PM10, VOC, and CO will continue to apply in order to prevent backsliding under the provisions of Section 110(l) of the Federal Clean Air Act. Note that the entire 1-hr ozone/VOC attainment/maintenance area is also part of the 8-hr Ozone Control Area as defined in Regulation No. 7, Section II.A.16. There are no affected states within 50 miles of the plant. The following Federal Class I designated area is within 100 kilometers of the plant: Rocky Mountain National Park.

This facility is a municipal waste landfill. Decomposing waste encapsulated within the landfill produces a gas by-product that is primarily composed of methane and carbon dioxide. Landfill gas (LFG) is emitted primarily through two sources. LFG can be emitted as fugitive gas through cover soils or through a LFG migration control system (GMCS). The GMCS is installed to control LFG migration. Collected LFG is sent to a flare for destruction. During its operation the flare generates various combustion by-products that are emitted into the atmosphere. Particulate emissions are generated from construction and operation of the landfill, which includes vehicle traffic on paved or unpaved roads and the handling of soil cover material. Tower Road Landfill also has two liquid waste solidification basins that create VOC and particulate emissions.

Based on the information provided in the renewal application, no changes have been made to any of the significant emission units. The source has updated the insignificant activity list.

The summary of emissions that was presented in the Technical Review Document (TRD) for the original permit issuance has been modified to reflect the most recent emission factors and emission estimates (based on historic waste acceptance rates).

Facility-wide emissions are outlined below:

Pollutant	Potential-to-Emit (tons/yr)	2004 Actual Emissions (tons/yr)
PM_{10}	4.2	0.35
PM	4.2	0.35
CO	99.0	6.32
NOx	9.9	1.58
SO2	3.7	0.30
VOC	46.7	0.88
HAPs	9 & 20	0.6

The potential-to-emit VOC and HAP emissions are calculated from EPA's Landfill Gas Emissions Model (LandGEM). This emission rate is based on the landfill's maximum design capacity, and the control equipment required in NSPS WWW. The actual emissions found in the table above are the emissions reported on the most recently submitted APEN.

Compliance Assurance Monitoring (CAM) Applicability

The landfill gas collection system is equipped with a flare to control VOC and HAP emissions. The potential to emit of the landfill, without controls, does not exceed major source levels and the flare is not subject to CAM. Additionally, CAM would not apply since 40 CFR Part 60, §60.18 requires continuous compliance (presence of a flame at all times).

III. Discussion of Modifications Made

Source Requested Modifications

The source submitted a request on October 29, 2003 to modify the operating permit and construct two liquid waste solidification basins and to increase the traffic allowed to account for an increase due to the solidification basins. In their request the source indicated that the modification met the requirements for a minor permit modification and requested that the modification be processed under the minor modification procedures in Colorado Regulation No. 3, Part C, Section X. The source requested emissions based on the expected design capacity of these basins. Requested emissions for these units are below the PSD significance levels.

BFI submitted an additional modification request on March 10, 2004. This was a request to allow BFI to calculate landfill gas emissions using the method described in AP-42 2.4 instead of using the Landfill Gas Emission Model (LandGEM).

Change in responsible official requested on May 9, 2003.

BFI submitted an additional modification request on June 2, 2004 (by email). BFI has requested that the Division allow some of the new wells and perimeter wells to exceed the 5% oxygen limits found in §60.753(c) of NSPS WWW.

Other miscellaneous permit language changes as requested in Attachment 2 of the renewal application submitted January 27, 2005.

Two liquid waste solidification basins

Applicable Requirements – The source has requested that the Division approve the construction and operation of the solidification basins. Since the source has requested that this unit be processed as a combined construction/operating permit using the minor modification procedures in Reg 3, Part C, Section X, no construction permit will be issued and all applicable

requirements will be incorporated directly into the operating permit with the renewal. The applicable requirements for this unit are as follows:

- Receipt of non-hazardous liquid waste shall not exceed 9 million gallons per year (as requested by the APEN submitted on October 29, 2003).

- Emissions of air pollutants shall not exceed the following limitations (as requested by the APEN submitted on October 29, 2003 and the revised emission calculation table submitted February 27, 2004):

  - VOC 28.38 tons/yr

  - HAP 0.53 tons/yr

  - PM10 13.93 tons/yr (fugitive)

  Note that since this unit is a true minor source, the Division does not require that monthly emission and throughput limits be imposed on this source for the first year of operation as this requirement only applies for major or synthetic minor sources.

- Construction of this source must commence within 18 months of initial approval permit issuance date or within 18 months of date on which such construction or activity was scheduled to commence as stated in the application (Reg 3, Part B, Section IV.G.4.a.(i) thru (ii)).

- Within 180 days after commencement of operation, compliance with the conditions contained on this permit shall be demonstrated to the Division (Reg 3, Part B, Section IV.H.2). The first annual compliance report shall serve as self-certification of compliance.

These basins will be used to solidify non-hazardous liquid municipal waste by mixing the liquid waste with an inert absorbent. The solidified waste will then be taken to the working area of the landfill for disposal. There are a number of inert absorbents that will be used, including auto fluff, fly ash, kiln dust, and soil. There are also different types of liquid wastes that may be accepted, including liquids from car washes, milk, drill water, grease traps, waste beer, and sand traps. No portable toilet waste will be accepted. The incoming trucks containing the liquid waste will dump it directly into the basins. The absorbents will be added to the liquid waste and mixed with a track hoe bucket. The incoming liquid waste is tested to verify that it is not considered hazardous waste. The waste generator is responsible for having this analytical data.

Emission Factors – The liquid waste could contain some VOCs and HAPs. These will be emitted during the mixing process. The emissions were estimated using the maximum design rate of the basins. BFI estimates that the basins could handle up to 9 million gallons of liquid waste per year. The operating

schedule would allow up to four separate loads of liquid waste per day. The liquid waste exposure time would be one hour. This exposure time is used in the emission calculation. The liquid waste will be limited to non-hazardous wastes. This also limits the VOC and HAP content of the liquid wastes. Emissions were estimated based on the highest HAP content allowed while still being classified as non-hazardous. This is a requirement of BFI's solid waste permit, and can be used to limit the PTE. AP-42 4.3 (9/91) was used to determine the emissions from the solidification basins. This section details how to estimate evaporation loss from waste water collection, treatment and storage.

Monitoring Plan – BFI will need to estimate emissions from these basins using the calculations outlined in AP-42 4.3 (9/91). BFI will be allowed to use the maximum allowed concentrations as the default concentrations in their calculations if they wish. These concentrations are outlined in Table 1 of the application (VOC and HAP Emission Calculations) received by fax on February 27, 2004, and will be included in Appendix G of the permit. The actual concentrations of the liquid waste must be below the maximum concentrations. If they receive any liquid waste with a pollutant not listed in the table, BFI must update the table with that pollutant and enter a maximum concentration. The chemicals listed should include all HAPs and VOCs found in the liquid waste. If BFI does not want to use the maximum concentrations in the calculations, they must use the actual concentrations from the liquid waste analytical data.

BFI must follow the Liquid Waste Solidification Plan approved by CDPHE Hazardous Materials and Waste Management Division. This plan outlines the operational procedures to be used for the waste solidification. A portion of the plan will be attached to the permit as Appendix I

The accepted liquid waste will be certified by the generator to be non-hazardous. The Division is confident that the pollutant limits in Appendix G will not be exceeded since these are the maximum concentrations for non-hazardous waste. There was an existing concern about the VOC levels within the liquid wastes. BFI has agreed to require an MSDS from the waste generator to determine the VOC level in the waste. Wastes that do not have an MSDS will be tested to determine the VOC content. The VOC content will be used to calculate VOC emissions from the solidification process. BFI is only required to test for VOC if the waste is likely to contain VOC. BFI should use generator knowledge to determine if a test is needed.

BFI will also be limited to one hour of liquid waste exposure. This exposure time was used in their PTE calculations and will affect the actual emissions. This limited exposure time will also satisfy the RACT Requirement of Regulation No. 7.II.C.2.

The fugitive particulate control conditions and control measures from Section II.2. of the permit will apply to the fugitive dust from the solidification basins. No additional fugitive dust conditions are necessary.

Increase in haul road traffic

Applicable Requirements – The source has requested that the Division increase the haul road vehicle use from 800 vehicles per day to 1200 vehicles per day. Since the source has requested that this be processed as a combined construction/operating permit using the minor modification procedures in Reg 3, Part C, Section X, no construction permit will be issued and all applicable requirements will be incorporated directly into the operating permit with the renewal permit. The applicable requirements for this unit are as follows:

- Vehicle traffic shall not exceed 1200 vehicles per day.
- Emissions of air pollutants shall not exceed the following limitations
    - Fugitive PM10 (increase) 17.09 tons/yr

Note that since this unit is a true minor source, the Division does not require that monthly emission and throughput limits be imposed on this source for the first year of operation as this requirement only applies for major or synthetic minor sources.

Emission Factors – Emissions were calculated using AP-42 Section 13.2.

Monitoring Plan – No new conditions will be necessary for this modification.

Change the method of emission calculations

BFI sent the Division a request on March 10, 2004 to change the requirement to estimate emissions using the EPA LandGEM computer program. They prefer to estimate emissions using AP-42 2.4. LandGEM is based on the calculations from AP-42 2.4, so the requirement will be changed.

Change in Responsible Official

The Division received a letter on May 9, 2003 from the source requesting that the Responsible Official be changed. The change will be made as requested.

NSPS WWW Alternative

BFI submitted an additional modification request on June 2, 2004 (by email). BFI has requested that the Division allow some of the new wells and perimeter wells to exceed the 5% oxygen limits found in §60.753(c) of NSPS WWW. The

Division approved this alternative on May 20, 2004, and has included some language in Section II, Condition 1.4.8 to allow it.

Miscellaneous Permit Language Changes

- Mailing address updated.
- The fugitive dust control plan is now referenced in Section I, 6.1.
- The flare operating parameters were added to Appendix H and referenced in Section II, Table 1.
- The references to NSPS Subpart Cc have been changed to NSPS Subpart WWW. Section II, Condition 1.4 was revised to reflect the NSPS WWW conditions.
- Language was added to Section II, Condition 1.2 to require test results to be made available to the Division upon request.
- The condition requiring a CO test on the flare has been removed since the testing has already been conducted.
- The request to submit a written plan for monitoring and operating parameters of the control equipment was removed from Section II, Condition 1.3 since the plan was already submitted and incorporated into Appendix H.
- The word “annual” was removed from Section II, Condition 1.9.2.
- Section II, Condition 2.3.1 was changed to require watering or chemical suppressants.
- Minor language change made to Section II, Condition 2.3.6 & 2.3.7.

Other Modifications

In addition to the requested modifications, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal.

These changes are as follows:

Page following Cover Page

- Monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on the permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on

the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).

- Added language specifying that the semi-annual reports and compliance certifications are due in the Division's office and that postmarks cannot be used for purposes of determining the timely receipt of such reports/certifications.

Section I - General Activities and Summary

- Revised Condition 1.1 to have a more accurate description of the emission sources. In Condition 1.1, the attainment area description was updated and the reference to Bio Energy's combustion engines was removed. The permit for these engines was canceled.

- Conditions 13 and 17 in Condition 1.4 were renumbered to 14 and 18 and Condition 21 in Condition 1.5 was renumbered to 22. The renumbering changes were necessary due to the addition of the Common Provisions requirements in the General Conditions of the permit. In addition, General Condition 3.g (common provisions, affirmative defense) was added as a State-only requirement.

- Minor language changes were made to Condition 3.1 to more appropriately reflect the status of the source with respect to PSD.

- Based on comments made by EPA on another operating permit, the phrase "Based on the information provided by the applicant" was added to the beginning of Condition 4.1 (112(r)).

- Added a "new" Section 5 for compliance assurance monitoring (CAM).

Section II - Specific Permit Terms

Section II.1: Landfill Gas Generation & Flare

- The monthly limits were removed from the permit. They were only valid for the first year of operation and are unnecessary now.

- The requirement to calculate VOC & HAP emissions from the landfill gas generation was changed from monthly to annually. The accepted method used to estimate these emissions does not generate valuable results with a monthly calculation. The method is designed only to accurately estimate emissions on an annual basis.

- Removed the reference to permit 99AD0380 issued to Bio Energy because this permit has been canceled.

- Added Condition 1.9 for the MACT, Subpart AAAA, which now applies to the landfill

- Added language to require annual compliance with the VOC emissions via EPA's LandGEM or AP-42 2.4. This is consistent with other recently issued Operating Permits for landfills.

- Modified the NSPS WWW, and Regulation No. 6, Part A, Subpart A, General Provisions language to be consistent with other recently issued Operating Permits for landfills (Conditions 1.4 & 1.5).

- Recalculated the combustion emissions from the flare based on the latest emission factors from AP-42 2.4. The emissions and emission factors for NO_x, TSP, and PM_{10} have been revised and the table has been updated. The emissions were estimated based on the MMBtu/yr permit limit and the assumption that the landfill gas was 50% methane and 454.9 Btu/scf. The permittee should review these new limits and make sure they are acceptable. The CO emission factor has not changed. The flare was tested on June 4, 2003 and shown to be in compliance with the current CO emission factor.

- Condition 1.8 was revised to include the new NOx emission factor.

- Condition 1.6 was revised to remove the State opacity requirement and replace it with the requirement from 40 CFR § 60.18, since it is more stringent. Also modified the condition to require a Method 22 observation if visible emissions are present during the weekly check of the flare. This is consistent with other recently issued Operating Permits.

- Revised Condition 1.2 to require determination of landfill gas BTU content and methane content on an annual basis. The language is now consistent with other recently issued Operating Permits.

<u>Section III – Permit Shield</u>

- The citation in the permit shield was corrected.

<u>Section IV - General Conditions</u>

- Added language from the Common Provisions (new condition 3). With this change the reference to "21.d" in Condition 20 (prompt deviation reporting) will be changed to "22.d", since the general conditions are renumbered with the addition of the Common Provisions.

- Removed the upset and breakdown provisions from Condition 4 (emergency provisions) since they are included in the Common

Provisions.

- The citation in General Condition 16 (open burning) was revised. The open burning requirements are no longer in Reg 1 but are in new Reg 9. In addition, changed the reference in the text from “Reg 1” to “Reg 9”.

Appendices

- Appendix B and C were modified to make the permit more consistent with recently issued permits.

- The table in Appendix F was cleared.

- The collection and control system design plan was removed from this appendix. There is no requirement to have this in the permit. The maximum liquid waste pollutant concentration table is now located in Appendix G.

- Appendix H now contains the Control System Operating Parameters.

- Appendix I now contains some pages of the Liquid Waste Solidification Plan.